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(56) Documents Cited

GB 2145693 A GB 2002327 A EP 0117567 A

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(54) Dispensing nozzle in towel dispenser

(57) A towel dispenser 10 comprises a housing 12 and a dispensing nozzle 16 projecting from a cap 24 which is press fitted onto the housing 12. The housing 12 is sized to contain a continuous roll of towel which is impregnated with liquid and which has parallel, spaced apart perforation lines along its length. The nozzle 16 has an aperture 26 defined therein which is surrounded by an intumed lip 18. A leading edge of the roll of towel can be pulled through the nozzle 16. A diaphragm 28 with a raised, cross-shaped slit 32 defined in it is positioned in the housing 12 beneath the roll of towel. The leading edge of towel passes through the slit 32 before it exits through the nozzle 16. The cross-shaped slit 32 helps to create tension in the towel, across a line of perforations, when the towel is gripped and pulled through the nozzle 16. It thus assists a user to tear a towel of a desired length from the roll. The diaphragm 28 has an upturned periphery and between this upturned periphery and the raised cross-shaped slit 32, a drip tray is defined for liquid from the roll of towel.

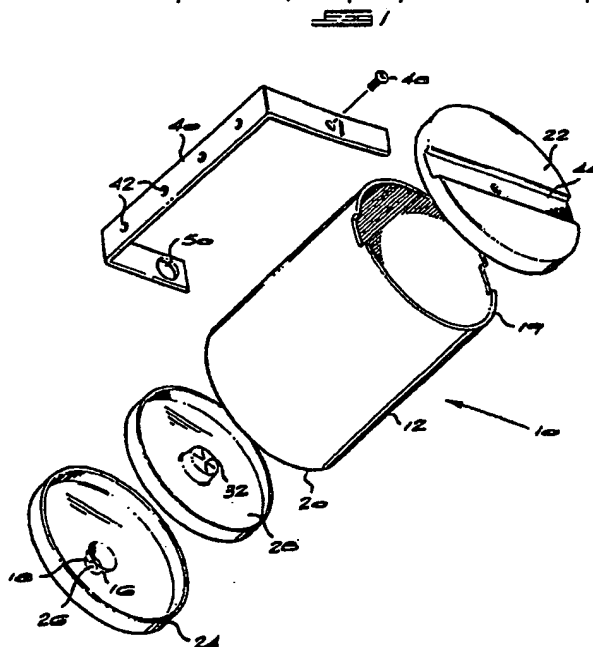


FIG 1

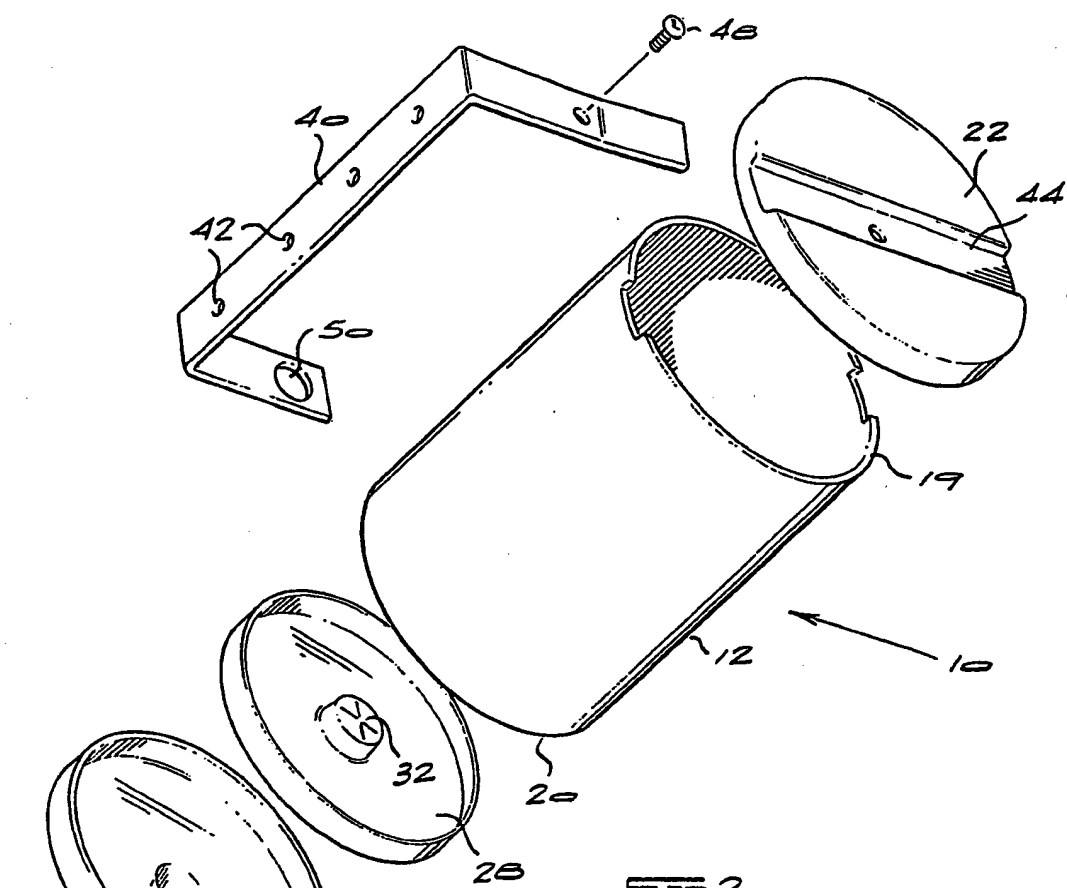
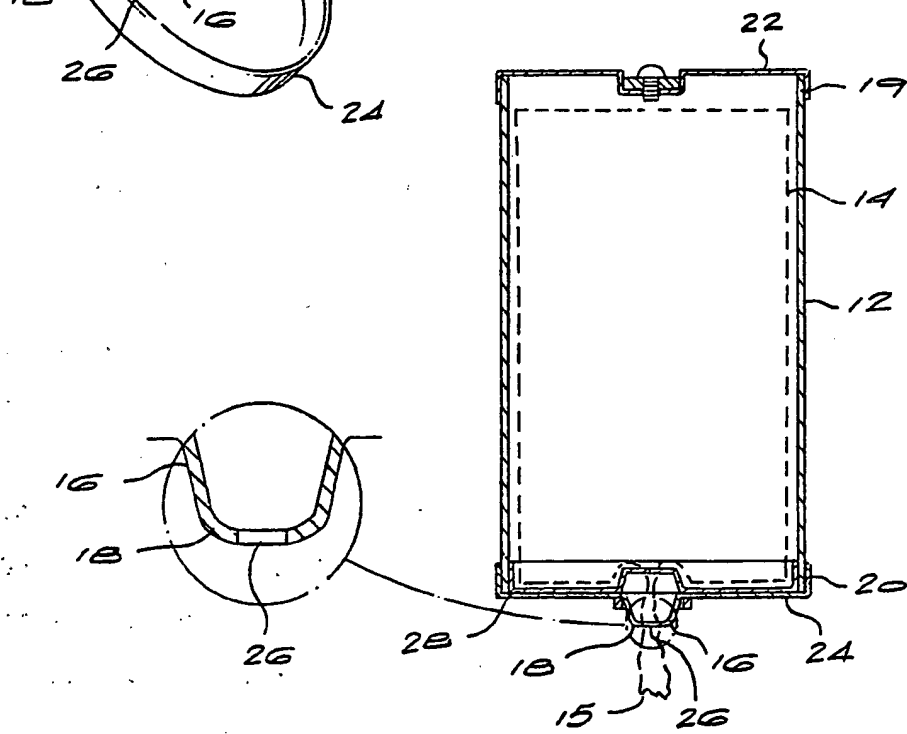


FIG 2



This invention relates to a towel dispenser.

Dispensers for tissues or towels, wet or dry, usually contain some form of housing with an opening therein through which the towel is dispensed from a roll. The opening is either flush with the base of the housing or has some form of dispensing nozzle.

The disadvantage with these dispensers is that it is often difficult to sever a selected length of material from the roll. Even if there are weakened areas or perforations along the roll, two or more lines of perforation usually pass through the opening before the material tears. This is not only inconvenient but it also results in wastage as a longer than necessary piece of towel or tissue is dispensed. The excess piece of material may remain attached to the roll but if it is impregnated with some form of liquid, it tends to dry out.

According to the invention a towel dispenser comprises a housing and a dispensing nozzle projecting from the housing, the housing being sized to contain a roll of towel of the type having spaced apart, parallel lines of weakness defined at intervals along its length at which it is tearable to produce single, discrete towels, the nozzle defining an aperture through which a leading edge of the roll of towel can exit from the housing and defining a re-entrant lip about the aperture to assist a user in tearing a piece of towel of a desired length from the roll.

Towel in this specification means a woven or non-woven synthetic or natural substrate.

The dispenser preferably also comprises a diaphragm with a cross-shaped slit defined therein through which the leading edge of the towel passes before it passes through the aperture and which is adapted to grip the towel, making it easier to tear off a piece of towel at the line of weakness intermediate the cross-shaped slit and the aperture.

The dispensing nozzle preferably depends from an operatively lower end of the housing, and the diaphragm is preferably sized to fit snugly within the housing, between the roll of towel and the dispensing nozzle.

The roll of towel is preferably impregnated with a liquid, for example an antiseptic liquid.

The cross-shaped slit may be raised and the periphery of the diaphragm may

antiseptic fluid. The roll of towel material has spaced apart, parallel lines of weakness, in the form of perforations, (not shown) defined at predetermined intervals along its length, at which it is tearable to produce single, discrete towels. (It is to be noted, however, that the towel substrate material can be another material, for example paper, can be non-perforated and can be dry.)

The dispenser 10 comprises a plastics, cylindrical housing 12, within which the roll 14 of towel material is accommodated. A tapered, dispensing nozzle 16, which has a central aperture 26 with a diameter of 9mm defined therein, depends from the housing 12. The leading edge 15 of the roll 14 extends through the aperture 26 and the size of the aperture 26 may vary with the thickness of the towel material. At the end of the nozzle 16 a re-entrant lip 18, the edges of which may be slightly angled and/or serrated, is defined. It surrounds the aperture 26 in the nozzle 16 and defines a travel path for the leading edge 15 when it is pulled. It ensures that it is easier to tear a towel from the roll 14 at a particular perforation line.

The housing 12 is open-ended. Flexible, transparent, plastics caps 22 and 24 are press-fitted onto its opposed, operatively upper and lower ends 19 and 20 respectively. The nozzle 16 is moulded integrally with the cap 24 and depends vertically downwardly, for about 2 cm beyond the cap 24. When the caps 22 and 24 are fitted to the housing 12, and a roll 14 of wipe material is in place, the interior of the housing 12 is relatively air tight. This, together with the compactness of the roll 14 prevents evaporation of the antiseptic liquid from the roll 14.

A disc-shaped diaphragm 28 is accommodated within the housing 12 near its end 20. The diaphragm 28 is sized to fit snugly within the housing 12 and this also helps to keep the interior of the housing 12 relatively air tight. A raised,

cross-shaped slit 32, through which the leading edge 15 passes before exiting through the aperture 26, is defined in the centre of the diaphragm 28. In use, the slit 32 helps to grip the material from the roll 14 while the edge 15 is being pulled by a user. In this way it co-operates with the re-entrant lip 18 to sever a towel at the perforation line intermediate the leading edge 15 and the slit 32 by creating a tension along this perforation line. The distance between the slit 32 and the re-entrant lip 18 is important for ensuring that the appropriate amount of tension is exerted on the perforation line to create a tear and also for ensuring that only a small length of the towel, after the tear, extends through the aperture 26. This helps to limit evaporation and drying.

The periphery of the diaphragm 28 is upturned and between this periphery and the raised cross-slit 32 an annular drip tray is defined for liquid which drips from the roll 14. This prevents dripping onto the floor underneath the dispenser 10.

A U-shaped bracket 40 with apertures 42 defined in its base fits around the dispenser 10 and is for mounting it on a wall adjacent a toilet seat. The dispenser 10 should be mounted at a suitable height so that when the leading edge 15 is gripped and pulled by a user, it will be pulled laterally or slightly upwardly relative to the nozzle 16 and towels will thus tear reliably at consecutive rows of perforations. One arm of the bracket 40 fits into a groove 44 defined in the cap 22. It is attached to the cap 22 by a screw 48. The other arm has an aperture 50 defined therein which fits over the nozzle 16. The bracket 40 ensures that the housing 12 is difficult to tamper with. It prevents unauthorised access to the roll of towel 14 and the housing 12 therefore remains sealed until serviced by service personnel.

The dispensers of the invention ensure that towels or wipes are easily and

consistently severed from a continuous roll at consecutive lines of perforations. This prevents waste and allows towels and wipes to be torn off the roll with one hand and with minimum effort.

CLAIMS

1. A towel dispenser comprising a housing and a dispensing nozzle projecting from the housing, the housing being sized to contain a roll of towel of the type having spaced apart, parallel lines of weakness defined at intervals along its length at which it is tearable to produce single, discrete towels, the nozzle defining an aperture through which a leading edge of the roll of towel can exit from the housing and defining a re-entrant lip about the aperture to assist a user in tearing a piece of towel of a desired length from the roll.
2. A towel dispenser according to claim 1, which also comprises a diaphragm with a cross-shaped slit defined therein through which the leading edge of the towel passes before it passes through the aperture and which is adapted to grip the towel, making it easier to tear off a piece of towel at the line of weakness intermediate the cross-shaped slit and the aperture.
3. A towel dispenser according to claim 1 or claim 2, wherein the dispensing nozzle depends from an operatively lower end of the housing and wherein the diaphragm is sized to fit snugly within the housing, between the roll of towel and the dispensing nozzle.
4. A towel dispenser according to any one of claims 1 to 3, wherein the roll of towel is impregnated with a liquid.
5. A towel dispenser according to claims 2, 3 and 4, wherein the cross-shaped slit is raised and the periphery of the diaphragm is upturned

so that between the upturned periphery and the raised cross-shaped slit an annular drip tray is defined to catch liquid which drips from the roll of towel.

6. A towel dispenser according to any one of the preceding claims, wherein the nozzle is moulded integrally with a cap which fits over the operatively lower end of the dispenser.
7. A dispenser according to any one of the preceding claims which comprises a U-shaped bracket, having two arms and a base, for mounting it on a wall and for preventing unauthorised access to the roll of towel, the respective arms fitting over an operatively upper and lower end of the dispenser and the base being adapted to be mounted on the wall.
8. A dispenser substantially as herein described with reference to Figures 1 and 2.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

GB 9318091.7

Relevant Technical fields

(i) UK Cl (Edition L) B8M: MB9, MB10

(ii) Int Cl (Edition 5) A47K

Search Examiner

G WERRETT

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

8 OCTOBER 1993

Documents considered relevant following a search in respect of claims 1 TO 8

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2145693 A (BOWATER-SCOTT) - see rim 23	1
X	GB 2002327 A (WAKODO) - see member 5	1
X	EP 0117567 A (EDET) - see inclined extension 13 Figure 4	1

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